



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2015-6544; Directorate Identifier 2014-NM-198-AD; Amendment 39-18704; AD 2016-22-15]**

**RIN 2120-AA64**

**Airworthiness Directives; Saab AB, Saab Aeronautics (Formerly Known as Saab AB, Saab Aerosystems) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** We are superseding Airworthiness Directive (AD) 2012-24-06 for certain Saab AB, Saab Aeronautics Model 340A (SAAB/SF340A) and SAAB 340B airplanes.

AD 2012-24-06 required replacing the stall warning computer (SWC) with a new SWC that provides an artificial stall warning in icing conditions, and modifying the airplane for the replacement of the SWC. This new AD adds airplanes to the applicability, and adds requirements to replace the existing SWCs with new, improved SWCs, and to modify the airplane for the new replacement of the SWC. This new AD also reduces the compliance time for replacing the SWCs. This AD was prompted by a determination that airplanes with certain modifications were excluded from the applicability in AD 2012-24-06, and are affected by the identified unsafe condition; and that the SWC required by

AD 2012-24-06 contained erroneous logic. We are issuing this AD to prevent natural stall

events during operation in icing conditions, which could result in loss of control of the airplane.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Saab AB, Saab Aeronautics, SE-581 88, Linköping, Sweden; telephone +46 13 18 5591; fax +46 13 18 4874; email [saab340.techsupport@saabgroup.com](mailto:saab340.techsupport@saabgroup.com); Internet <http://www.saabgroup.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-6544.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-6544; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (telephone 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket

Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Shahram Daneshmandi, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1112; fax 425-227-1149.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to supersede AD 2012-24-06, Amendment 39-17276 (77 FR 73279, December 10, 2012) (“AD 2012-24-06”). AD 2012-24-06 applied to certain Saab AB, Saab Aeronautics Model 340A (SAAB/SF340A) and SAAB 340B airplanes. The SNPRM published in the Federal Register on July 12, 2016 (81 FR 45072) (“the SNPRM”). We preceded the SNPRM with a notice of proposed rulemaking (NPRM) that published in the Federal Register on December 17, 2015 (80 FR 78699) (“the NPRM”). The NPRM was prompted by a determination that airplanes with certain modifications were excluded from the applicability in AD 2012-24-06, and are affected by the identified unsafe condition; and the SWC required by AD 2012-24-06 contained erroneous logic. The NPRM proposed to add airplanes to the applicability and to add requirements to replace the existing SWCs with new, improved SWCs and to modify the airplane for the new replacement of the SWC. The SNPRM proposed to reduce the compliance time for replacing the SWCs. We are issuing this AD to prevent natural stall

events during operation in icing conditions, which could result in loss of control of the airplane.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2014-0218, dated September 29, 2014 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition on certain Saab AB, Saab Aeronautics Model 340A (SAAB/SF340A) and SAAB 340B airplanes.

The MCAI states:

A few natural stall events, specifically when operating in icing conditions, have been experienced on SAAB 340 series aeroplanes, without receiving a prior stall warning.

This condition, if not corrected, could result in loss of control of the aeroplane.

To address this potential unsafe condition, SAAB developed a modified stall warning system, incorporating improved stall warning logic, and issued Service Bulletin (SB) 340-27-098 and SB 340-27-099, providing instructions to replace the Stall Warning Computer (SWC) with a new SWC, and instructions to activate the new SWC. The new system included stall warning curves optimized for operation in icing conditions, which are activated by selection of Engine Anti-Ice.

Consequently, EASA issued AD 2011-0219 to require installation of the improved SWC.

After that [EASA] AD was issued, in-service experience with the improved stall warning system revealed cases of premature stall warning activation during the take-off phase. In numerous recorded cases, the onset of stall warning occurred without the 6 minute delay after weight off wheels.

This condition, if not corrected, could lead to premature stick shaker activation and consequent increase in pilot workload during the take-off phase, possibly resulting in reduced control of the aeroplane.

To correct this unsafe condition, EASA issued AD 2013-0254 retaining the requirements of EASA AD 2011-0219, which was superseded, to require deactivation of the ice speed curves in the improved SWC on SAAB 340 aeroplanes, in accordance with SAAB SB 340-27-116.

Since EASA AD 2013-0254 was issued, SAAB developed a technical solution to eliminate the premature activation of the stall warning ice curves and issued SB 340-27-120 (modification of the existing Stall Warning System installation), SB 340-27-121 (activation of improved SWC for aeroplanes with a basic wing tip) and SB 340-27-122 (activation of improved SWC for aeroplanes with an extended wing tip). SAAB SB 340-27-120 provides modification and installation instructions valid for pre- and post-SB 340-27-097, 340-27-098, SB 340-27-099 and SB 340-27-116 aeroplanes. For aeroplanes modified in accordance with SAAB AB mod. No. 2650 and/or mod. No. 2859 which are no longer registered in Canada, SAAB AB issued SAAB AB SB 340-27-109 to provide modification and installation instructions to remove the ice speed curve function.

For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2013-0254, which is superseded, and requires modification of the Stall Warning and Identification System and replacement of the SWC with an improved unit.

You may examine the MCAI in the AD docket on the Internet at

<http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-6544.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the SNPRM or on the determination of the cost to the public.

## **Conclusion**

We reviewed the available data and determined that air safety and the public interest require adopting this AD as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the SNPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM.

## **Related Service Information under 1 CFR part 51**

Saab AB, Saab Aeronautics has issued the following service information:

- Saab Service Bulletin 340-27-109, dated April 14, 2014.
- Saab Service Bulletin 340-27-116, dated October 18, 2013.
- Saab Service Bulletin 340-27-120, dated July 11, 2014.
- Saab Service Bulletin 340-27-121, dated July 11, 2014.
- Saab Service Bulletin 340-27-122, dated July 11, 2014.

The service information describes procedures for deactivating the stall warning speed curves in the SWCs for certain airplanes; replacing the existing SWCs with new, improved SWCs; and modifying the airplane for the new replacement of the SWC. These documents are distinct since they apply to different airplane models in different configurations. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## **Costs of Compliance**

We estimate that this AD affects 105 airplanes of U.S. registry.

The actions required by AD 2012-24-06 and retained in this AD, take about 78 work-hours per product, at an average labor rate of \$85 per work-hour. Required parts cost about \$33,000 per product. Based on these figures, the estimated cost of the actions that were required by AD 2012-24-06 is \$39,630 per product.

The new requirement of this AD adds no additional economic burden.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on

the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.



### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2012-24-06, Amendment 39-17276 (77 FR 73279, December 10, 2012), and adding the following new AD:

**2016-22-15 Saab AB, Saab Aeronautics:** Amendment 39-18704; Docket No.

FAA-2015-6544; Directorate Identifier 2014-NM-198-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD replaces AD 2012-24-06, Amendment 39-17276 (77 FR 73279, December 10, 2012) (“AD 2012-24-06”).

#### **(c) Applicability**

This AD applies to Saab AB, Saab Aeronautics (formerly known as Saab AB, Saab Aerosystems) Model 340A (SAAB/SF340A) and SAAB 340B airplanes, certificated in any category, as identified in paragraphs (c)(1) and (c)(2) of this AD.

(1) Model 340A (SAAB/SF340A) airplanes, serial numbers 004 through 159 inclusive.

(2) Model SAAB 340B airplanes, serial numbers 160 through 459 inclusive, except serial numbers 170, 342, 362, 363, 367, 372, 379, 385, 395, 405, 409, 431, 441, and 455.

**(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight Controls.

**(e) Reason**

This AD was prompted by a determination that airplanes with certain modifications were excluded from the applicability in AD 2012-24-06, and are affected by the identified unsafe condition; and the stall warning computer (SWC) required by AD 2012-24-06 contained erroneous logic. We are issuing this AD to prevent natural stall events during operation in icing conditions, which could result in loss of control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Deactivation of Stall Speed Curves**

For airplanes identified in paragraphs (g)(1) and (g)(2) of this AD: Within 30 days after the effective date of this AD, do the deactivation specified in paragraph (g)(1) or (g)(2) of this AD, as applicable to airplane configuration, in accordance with the Accomplishment Instructions of Saab Service Bulletin 340-27-116, dated October 18, 2013.

(1) For airplanes with a basic wing tip that has been modified using Saab Service Bulletin 340-27-098: Deactivate the stall speed curves in the SWC having part number (P/N) 0020AK6.

(2) For airplanes with an extended wing tip that has been modified using Saab Service Bulletin 340-27-099: Deactivate the stall speed curves in the SWC having P/N 0020AK7.

**(h) Replacement of SWCs**

Within 3 months after the effective date of this AD: Do the replacement specified in paragraph (h)(1) or (h)(2) of this AD, as applicable.

(1) For airplanes with basic wing tips: Replace all SWCs with new, improved SWCs having P/N 0020AK6-1, in accordance with the Accomplishment Instructions of Saab Service Bulletin 340-27-121, dated July 11, 2014.

(2) For airplanes with extended wing tips: Replace all SWCs with new, improved SWCs having P/N 0020AK7-1, in accordance with the Accomplishment Instructions of Saab Service Bulletin 340-27-122, dated July 11, 2014.

**(i) Concurrent Modification**

Before or concurrently with the accomplishment of the applicable requirements of paragraph (h) of this AD, do the actions specified in paragraph (i)(1) or (i)(2) of this AD, as applicable to airplane configuration.

(1) For airplanes on which either Saab AB Modification 2650 or Modification 2859 is not installed: Modify the stall warning and identification system, in accordance with the Accomplishment Instructions of Saab Service Bulletin 340-27-120, dated July 11, 2014.

(2) For airplanes on which either Saab AB Modification 2650 or Modification 2859 is installed, or on which both modifications are installed: Modify the stall warning

and identification system, in accordance with the Accomplishment Instructions of Saab Service Bulletin 340-27-109, dated April 14, 2014.

**(j) Parts Installation Prohibitions**

After the replacement required by paragraph (h) of this AD, no person may install any SWC having P/N 0020AK, 0020AK1, 0020AK2, 0020AK4, 0020AK6, 0020AK7, or 0020AK3 MOD 1, on any airplane.

**(k) Other FAA AD Provisions**

The following provisions also apply to this AD:

**(1) Alternative Methods of Compliance (AMOCs):** The Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to ATTN: Shahram Daneshmandi, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1112; fax 425-227-1149. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office. The AMOC approval letter must specifically reference this AD.

**(2) Contacting the Manufacturer:** For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA); or Saab AB, Saab Aeronautics' EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

**(l) Related Information**

Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2014-0218, dated September 29, 2014, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-6544.

**(m) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Saab Service Bulletin 340-27-109, dated April 14, 2014.

(ii) Saab Service Bulletin 340-27-116, dated October 18, 2013.

(iii) Saab Service Bulletin 340-27-120, dated July 11, 2014.

(iv) Saab Service Bulletin 340-27-121, dated July 11, 2014.

(v) Saab Service Bulletin 340-27-122, dated July 11, 2014.

(3) For service information identified in this AD, contact Saab AB, Saab Aeronautics, SE-581 88, Linköping, Sweden; telephone +46 13 18 5591; fax +46 13 18 4874; email [saab340.techsupport@saabgroup.com](mailto:saab340.techsupport@saabgroup.com); Internet <http://www.saabgroup.com>.

(4) You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on October 25, 2016.

Dionne Palermo,  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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